ABSTRACT

Novel methods for the synthesis of 8-nitroguanine are provided. Compositions comprising 8-nitroguanine, made by the novel synthetic methods are also provided herein. Methods of use of 8-nitroguanine, made by the novel synthetic methods, as a standard for detection of 8-nitroguanine in samples are also encompassed within the scope of the present invention. The present invention further concerns methods of predicting organ transplant rejection and detecting exposure to environmental stressors, such as ionizing radiation, toxic chemicals or infectious agents, by detecting 8-nitroguanine in one or more samples from a transplant recipient or an organism exposed to stress.